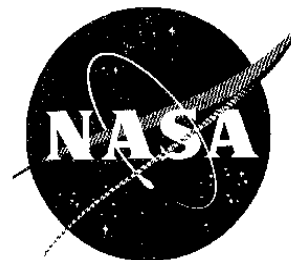


NewsRelease



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‘Smart Airports’ to Extend Personal Aircraft Gains

The alliance that has been demonstrating how personal airplanes can be made safer, more affordable and easier to fly has begun planning for “smart airports” and advanced airspace management concepts for a total small aircraft transportation system. As envisioned, smart airports would be located within a 30-minute drive of communities served and will provide near-all-weather accessibility to suburban, rural and remote America.

The development comes as NASA, the Federal Aviation Administration, state government, university and industry partners focus on the emerging role of personal air transportation to meet expected demands for higher-speed inter-city travel in the 21st century.

“Future demand cannot be satisfied through planned national investments in the maturing aircraft hub-and-spoke and automobile highway systems,” said Bruce Holmes, manager of NASA’s General Aviation Program Office, NASA Langley Research Center, Hampton, Va. “We have a goal to enable doorstep-to-destination travel at four times the speed of highways throughout suburban, rural and remote communities served by public use airports.”

Holmes spoke at a joint NASA, FAA and U.S. industry news briefing held today at AirVenture ‘99, the Experimental Aircraft Association (EAA) annual Fly-In and Convention, Oshkosh, Wis. Leaders of the Advanced General Aviation Transport Experiment (AGATE) consortium and the NASA General Aviation Propulsion (GAP) program reported on progress in the government-industry effort to revitalize the U.S. light airplane industry.

- more -

Among the accomplishments highlighted:

FAA LEADS DEMONSTRATION OF NEW SAFETY TECHNOLOGY

A Federal Aviation Administration/Cargo Airline Association sponsored exercise this month in southern Ohio was the first large-scale test of a technology that is expected to make the skies safer and to increase capacity at the nation's airports. Seven general aviation aircraft, 12 cargo planes, three FAA aircraft, a Navy P-3, and a NASA 757 flew more than 150 flight profiles to evaluate how Automatic Dependent Surveillance – Broadcast (ADS-B) can help pilots “see” nearby aircraft. The ADS-B Cockpit Display of Traffic Information provides the distance, direction and relative altitude of other aviation traffic for pilots; it also tells them if another plane is turning, climbing or descending. The Ohio test was the first in a series planned for the next three years under the FAA's Safe Flight-21 program.

PROPULSION FOR THE FUTURE

NASA's GAP program, managed by NASA Glenn Research Center, Cleveland, Ohio, is making great strides in reaching its goal of flight demonstrating a revolutionary new piston engine and turbofan engine at EAA's AirVenture '00. The first engines have been completed and are now being tested.

Advanced Intermittent Combustion Piston Engine – Teledyne Continental Motors (TCM), Mobile, Ala., and their industry team continue the development of the horizontally opposed, four-cylinder, liquid-cooled, two-stroke compression ignition (diesel) engine. A prototype engine is presently running on a dynamometer test bed at TCM. The engine achieved the rated speed of 2200 RPM. Preliminary results indicate that the engine is running smoothly with little detectable vibration. Future plans include building additional prototype engines for expanded development and endurance testing.

Revolutionary Low-Cost Turbine Engine – An industry team led by Williams International, Walled Lake, Mich. completed component testing of their high-bypass-ratio turbofan engine designated the FJX-2. Full engine testing is now in progress. Preliminary results of the engine running at 90% power indicate good measured performance. This fall the engine will be tested in an altitude test chamber at NASA Glenn to obtain performance characteristics throughout the engine's altitude and speed range.

TEAMS WORKING TO BRING WEATHER INFORMATION TO COCKPITS

With funding help from the NASA Aviation Safety Program, industry teams lead by ARNAV Systems, Inc., Puyallup, Wash., and NavRadio Corp., Golden, Colo., are developing timely moving weather map displays and the complex datalink network needed to bring them to general aviation pilots. Parts of the systems are already being flight-tested. NASA's Aviation Weather Information (AWIN) partners are also in the running to receive FAA assigned radio frequencies to provide flight information services (FIS) to general aviation cockpits. The AWIN team is working with Rockwell Science Center, Inc., Palo Alto, Calif., to design a preflight planning tool (AWARE) with decision aiding. AWIN is also supporting NavRadio Corp., Minn., in its efforts to develop an electronic pilot reporting system (EPIREPS). (Video of one early prototype of potential AWIN cockpit display available on request.)

SYNTHETIC VISION WOULD GIVE PILOTS CLEAR SKIES ALL THE TIME

NASA is negotiating with industry teams to design an innovative, affordable cockpit technology that will provide general aviation pilots with a clear electronic picture of what's outside

their windows, no matter what the weather or time of day. Synthetic vision will use existing technologies such as Global Positioning System signals, terrain databases and advanced displays to show potentially hazardous terrain, air traffic, landing and approach patterns, runway surfaces and obstacles. Contracts are expected to be awarded later this summer. (Video animation showing possible aviation weather information and synthetic vision displays available on request)

CRASH TEST

Researchers at NASA Langley are expected to conduct a full-scale crash test of a composite Lear Fanjet in September. The test is part of ongoing efforts to help general aviation manufacturers design aircraft that can better withstand the impact of an accident. NASA is working to improve computer models so that they more accurately predict crash loads. A crash test two years ago of another composite aircraft demonstrated that airbags and energy absorbing structures can help occupants better survive a 60-mph impact. That work was part of a NASA Small Business Innovation Research Program that provided funding to Terry Engineering, Wichita, Kan. and Cirrus Design Corp., Duluth, Minn. (Video of Terry Engineering test available on request.)

TAKE ONLINE QUESTIONNAIRE

Respondents to an AGATE on-line questionnaire say -- when the technology is in place -- they would be interested in making business or pleasure trips in an advanced light aircraft. The answers to these questions may influence the future of personal air transportation. Developers of the Internet site are hoping that everyone visits the site and completes the 10-minute survey. The effort is managed by NASA Langley. The questions focus on each individual's travel needs and expectations. The Internet site address is <http://apats.org>.